

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for the production of organic solar cells or photodetectors, ~~particularly based on organic polymers~~, comprising the following steps:
a first organic n- or p-conductive semiconductor layer is applied to ~~an~~ a first electrode,
to the solid first organic semiconductor layer is applied a second organic semiconductor layer of the respective other conductivity whose solvent partially dissolves the first organic semiconductor layer, such that a portion of the first semiconductor mixes with a portion of the second semiconductor ~~and to form~~ a bulk heterojunction mixed layer ~~forms~~,
a second electrode is applied opposite the first electrode.
2. (Currently Amended) The method according to claim ~~{1}~~ 1, characterized in that the solvent for each layer of the first and second organic semiconductor layers is matched to the solubility of the semiconductor to be deposited in that layer.
3. (Currently Amended) The method according to ~~one of the preceding claims~~ claim 1, characterized in that the application of a the first or second organic semiconductor layer is effected by doctor-blading or by a printing process.
4. (Currently Amended) The method according to ~~one of the preceding claims~~ claim 1, characterized in that a conjugated polymer is used as donor.
5. (Currently Amended) The method according to ~~one of the preceding claims~~ claim 1, characterized in that a soluble methanofullerene is used as acceptor.

6. (New) A method for producing organic solar cells or photodetectors, comprising:
applying a solution comprising a second organic semiconductor and a solvent on a first layer; the first layer comprising a first organic semiconductor that is at least partially soluble in the solvent; and

evaporating the solvent to form a second layer and a bulk heterojunction mixed layer between the first and second layers; the second layer comprising the second organic semiconductor and the bulk heterojunction mixed layer comprising a mixture of the first and second organic semiconductors.

7. (New) The method of claim 6, further comprising disposing the first layer on a first electrode before applying the solution.

8. (New) The method of claim 6, further comprising disposing a second electrode on the second layer after evaporate the solvent.

9. (New) The method of claim 6, wherein the solution is applied by spin-coating, doctor-blading, or by a printing process.

10. (New) The method of claim 6, wherein the first organic semiconductor is a conjugated polymer.

11. (New) The method of claim 6, wherein the second organic semiconductor is a fullerene.

12. (New) The method of claim 11, wherein the fullerene is a methanofullerene.

13. (New) An organic solar cell or photodetector, comprising:
a first layer comprising a first organic semiconductor;
a second layer comprising a second organic semiconductor; and
a heterojunction mixed layer disposed between the first and second layers; the
heterojunction mixed layer comprising a mixture of the first and second organic semiconductors.

14. (New) The organic solar cell or photodetector of claim 13, wherein the first
organic semiconductor is a conjugated polymer.

15. (New) The organic solar cell or photodetector of claim 13, wherein the second
organic semiconductor is a fullerene.

16. (New) The organic solar cell or photodetector of claim 15, wherein the fullerene
is a methanofullerene.

17. (New) The organic solar cell or photodetector of claim 13, further comprising a
first electrode and a second electrode, wherein the first layer, the second layer, and the
heterojunction mixed layer are disposed between the first and second electrodes.